

N^o 8882



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Date of Application, 30th Apr., 1901

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PROVISIONAL SPECIFICATION.

“Improvements in the Production of Slow Combustion Lamps for Disinfecting, Therapeutic, and other purposes.”

I, ADOLPH ROUBLEFF, temporarily of 3 rue de l'Amiral Moucher, Paris, France, Civil Engineer; do hereby declare the nature of this invention to be as follows:—

In order to ensure a thorough oxidation of the alcoholic vapours, to increase the surface of vaporisation and to prevent nasty vapours: the active body of my
5 lamp is made in a form of a conical, many-ribbed cap or capuchon in the inside of which is fitted reversely—base upside—a smaller capuchon with same number of ribs, both cones being adjusted by a refractory rod fastened to their centres, the lower prolongation of which rod fits into a central tubular seat of the wick's-head: the whole looking very much like a minute umbrella spread over the wick
10 and catching all the vapours emanating from same. The head of the wick is made of a strip of asbestos sheet wound spirally round a metallic tubular seat, so as to form a small cylinder, to the base of which is made fast by sewing or otherwise an ordinary cylindrical cotton wick.

The active body or the vaporiser of my lamp may be made from any refractory
15 porous material, capable to be moulded or stamped, such as kaolin, magnesia, asbestos or similar and impregnated by a solution of platinum chloride in conjunction with nitrates or chlorides of the refractory metals, such as thorium, yttrium, didymium or similar.

Dated this 28th day of April 1901

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ADOLPH ROUBLEFF

COMPLETE SPECIFICATION.

Improvements in the Production of Slow Combustion Lamps for Disinfecting, Therapeutic, and other purposes,

25 I, ADOLPH ROUBLEFF, of 3, rue de l'Amiral Moucher, Paris, France, Civil Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention concerns the so-called “lamp without a flame” It is well
30 known that platinum or finely divided platinum (sponge or black), owing to its occluding properties, is able to convert any of the alcoholic vapours into their aldehydes. by substituting 2 equiv. oxygen for 2-equiv. hydrogen. This property has been utilised for many practical purposes, but chiefly as a means to produce formaldehyde from ordinary wood spirit (methylic alcohol) for disin-
35 fecting purposes.

There are different systems of slow-combustion lamps now in use, but non of them—to my knowledge—are devoid of inconveniences and defects, which render

[Price 8d.]

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them too costly and inefficient to be of any great practical value. I will mention some of these defects and show the means, whereby I tried to avoid them.

1. Such lamps, in which the active part or oxidiser is made of platinum sponge or black,—owing to the very great delicacy of these materials—get out of use in a very short time, be it through choking by smoke, uncleanness, rough handling, or some other subtle cause. 5

2. The process of converting the vapours in all the existing lamps takes place only on the very fringes of the active body, leaving the bulk of it unutilised.

3. The vaporisation in all the existing lamps takes place on the upper part of an ordinary cotton wick which protrudes to a certain height. But as the wick's end in times becomes carbonised and has to be cut away, the distance between the vaporisation surface and the oxidiser has to be often readjusted in such a manner as not to be too small to produce a too lively combustion, (whereby besides the aldehydes—carbonic and other obnoxious gases will be the result of oxidation) and not too great to produce an unsufficient oxidation (whereby more unconverted than converted vapours will be the result): an operation which on account of its delicacy cannot be entrusted to everybody. 10 15

4. Besides this inconvenience the cotton wick in the existing lamps imbibes,—consequently vaporises—too much liquid in proportion to the oxidation going on on the fringes of the active body and the greater part of the vapours go to waste, viz: expand into the atmosphere unchanged. 20

Having dealt with some of the defects in the existing lamps, I will now describe my improvements

1. The active part of my lamp is made of any refractory porous material capable of being moulded or stamped in a form to be hereinafter described, such as caolin, asbestos, meerscham, magnesia and similar materials impregnated with a solution of chloride of platinum and the nitrates of some of the rare earths or a combination of same, such as thorium, yttrium, zirconium, didymium or similar substances and calcined after being dried. 25 30

In the annexed drawings given as example:

Fig. 1. represents a section of the essential parts of the lamp

Fig. 2 a side view

Fig. 3, 4 and 5 views of detailed parts

Fig. 6 a section of another modification of the apparatus.

The active body is made in the form of a many ribbed conical cap (A), in the inside of which is fitted a smaller cap (B) with same number of ribs base upward, both caps being adjusted and held together by a refractory rod ((a) fastened to their centres; the lower continuation of this rod serves as a foot for the compound active body and fits loosely into a tubular seat (d) at the centre of the wick's head. The upper (protruding) part of the wick or the wick's head may be made of any refractory porous material. or it may be made as in the Fig. 5 of a strip of asbestos sheet wound round the above mentioned tubular seat into a short cylinder to the under convexing base of which an ordinary cylindrical cotton wick (D) of a smaller diameter is made fast by sewing or otherwise (Fig 1.) 35 40 45

Owing to this compound wick, the vaporisation goes on regularly and slowly though the vaporisation surface is much more extensive than in the existing lamps. The vapours being forced to play inside—between the inner walls of the caps as well as outside—round the ribs: an active surface is obtained which, in proportion to the platinum used, is as many times as great as in other lamps; the oxidation of the alcoholic vapours—owing to the interposition of the two caps and the slower vaporisation on a great wick's surface—takes place on the whole of the surface of the active body, not only on the fringes, as in other lamps: there is no possibility of unchanged vapours expanding in the atmosphere, and lastly—an absolute fixity of the distance between the vaporisation surface and the oxidiser is obtained 50 55

For therapeutic purposes—creosote, eucalyptus, guaiacol, and similar materials are dissolved in the alcohol (ethylic or methylic) to be vaporised.

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2. In some cases, when the medicine is not soluble in alcohol, ether *etc*, the same may be vaporised by the heat of the glowing caps, for which purpose I may fix over the oxidiser a perforated globe and the unsoluble ingredients are put in a bowl on the globe, or the same may be incorporated in small lime bricks, and put on the globe or some other support over the active body, brought to a glowing condition by the action of the alcoholic vapours.

3. By some modification in the construction my lamp may be converted into an incandescent and a disinfecting lamp. For this purpose instead of a refractory rod, a hollow tube (*m*), Fig. 6 made fast to the centres of the two caps with prolongations over and under the same as in Fig. 6. The upper part of this tube is narrowed to a small opening; this tube is filled with a cotton wick (*n*) of its own the lower end of which plunges into the lamp wick (*D*). On the narrowed upper part of this tube is slipped on (or screwed on) a small burner fitted as usually with gallery and incandescent mantle. The action of the lamp is evident: when the oxidiser is brought to a red heat by the action of the alcoholic vapours, the inner tube becomes heated and drives off the alcohol imbibed by its wick into the burner, and when lighted brings the mantle to incandescence.

Having now particularly described and ascertained the nature of my invention, and in what manner the same is to be performed, I declare that what I claim is:

1. A slow combustion lamp characterised by the oxidiser which is made of any refractory porous material in the form of a compound many ribbed conical cap as substantially described and shewn in the annexed drawing.

2. A lamp with a compound cap as oxidiser the head of the wick being made of a porous refractory material or of a strip of asbestos sheet wound round a tubular seat as substantially shewn above.

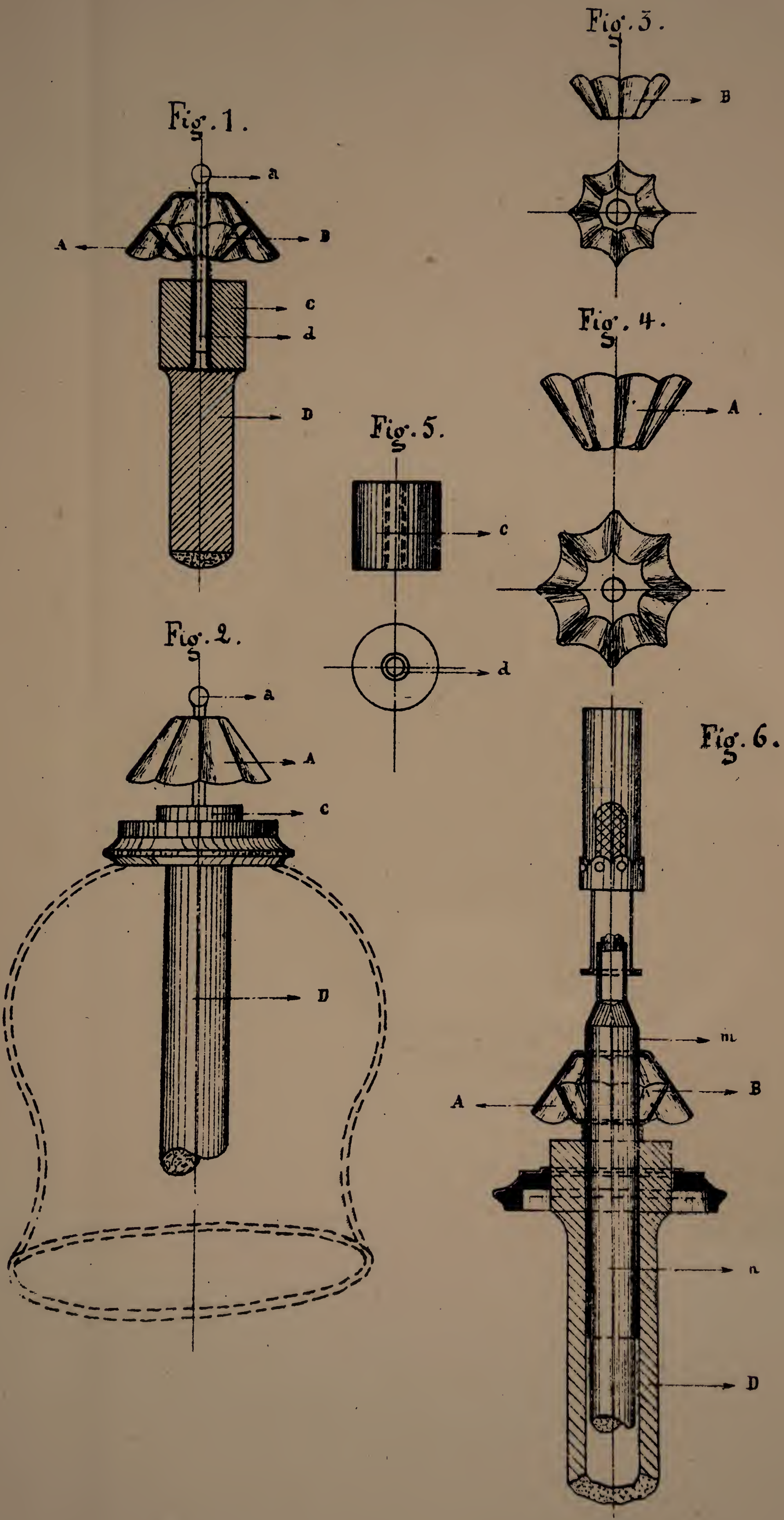
3. A lamp as claimed in 1 and 2, the vaporisation of medicines unsoluble in alcohol, ether *etc* separately by placing them in bowls or in the form of bricks on a support over the glowing active body.

4. A lamp such as claimed in 1 and 2 above, the modification in the construction in order to transform the lamp into a lighting and disinfecting apparatus as described above and shewn in Fig. 6 substantially as herein described and shewn by the accompanying drawings.

Dated this 25th of January 1902

ADOLPH ROUBLEFF





[This Drawing is a reproduction of the Original on a reduced scale]

